

## REMARKS

The Office Action, dated February 21, 2008 addressed claims 1-18. In this document, claims 1, 3-6, 14-29 are deleted; claims 2, 7, 8 and 12 are amended; and new claim 30 is added. Consequently, upon entry of this document, claims 2, 7-13 and 30 will remain in the application.

### Claim Rejections under 35 U.S.C. §103(a)

Claims 1, 3-12 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable in view of USPN 6,191,784 to Buxton, et al. ("Buxton").

The rejection of claims 1, 3-12 is moot, because claim 1 has been canceled and replaced by new independent claim 30, which incorporates the subject matter of originally-filed claims 1, 3 and 5, but with the wording thereof rearranged to make new claim 30 comply with US practice, without limiting the breadth thereof. Apparently, the originally-filed US claims were merely translated from their original French language form, without regard to US practice. The present claim amendments do not add new matter; and full support for the amended claim language can be found in the specification as filed. The remaining dependent claims are renumbered accordingly to depend from new independent claim 30, which is believed to be patentable over Buxton and USPN 7,002,553 to Shkolnikov ("Shkolnikov"), whether alone or in combination.

Buxton describes a user interface system and method for controlling playback time-based temporal digital media, or in other words, a method for facilitating editing frames/clips in a video. Specifically, Buxton uses a known device (like a "space mouse" or 3D mouse) providing for six degrees of freedom and assigns its own meaning to each degree of freedom. At column 2, lines 26-41 linear movement of the device in the X direction displays the last frame and first frame, in the Y direction stops the video playback and Z direction marks and unmarks keyframes, while rotation of the device in the A direction decrements and increments the keyframes, in the B direction decrements and increments a frame and in the C direction plays the video backward and forward. Basically, Buxton describes how a user can move a graphical object within a video clip to

facilitate editing of the video by simplifying complex steps/movements into singular commands on the pointing device. At column 3, lines 10-20, the user may translationally and rotationally control and edit graphical objects that appear on a video display using a pointing device 106.

In contrast, Applicant's new independent claim 30 recites:

A method of manipulating a 3D image using a peripheral device connected to a display monitor and processor, said peripheral device including a gripping device, comprising the steps of:

displaying a 3D image on said display monitor,

detecting forces and/or displacements, upon said gripping device by the user, wherein said gripping device including forming sensors, said forming sensors detecting movement in six degrees of freedom, said six degrees of freedom including a first operating mode of x, y and z parameters forming translation components for translating or zooming the 3D image and a second operating mode of A, B and C parameters forming rotation components for rotating the 3D image,

generating command information from said gripping device of said peripheral device to said processor based upon said forces and/or displacements, and thus

manipulating the 3D images using only one of either of said first operating mode or said second operating mode,

wherein at least one rotation component and at least one translation component are combined and the combined component(s) thus obtained is (are) utilized as rotation component(s) in said first operating mode and as translation component(s) in said second operating mode, and further wherein at least one combination of components is a linear combination.

Thus, in contrast to Buxton, an embodiment of the presently claimed invention, provides a method of using a peripheral device to manipulate "3D images using only one of either of said first operating mode or said second operating mode," (emphasis added) and further that the "first operating mode of x, y and z parameters forming translation

components for translating or zooming the 3D image and [the] second operating mode of A, B and C parameters forming rotation components for rotating the 3D image.” In other words, the 3D images of an embodiment of the claimed invention can be manipulated in only one of the operating modes at a time – e.g., manipulating a 3D image such that the entire image is either rotated or translated - depending upon the mode selected by the user. Applicant has thus taken a complex device that is usually extremely sensitive to movements and also (like Buxton) assigned its own meaning to the six degrees of freedom provided in the device. In an embodiment of the present invention, however, the user is not necessarily an accomplished gamer (one who plays video games and thus able to skillfully manipulate the device to achieve the desired result in a game). Rather, in a manner contrary to Buxton’s teachings, Applicant has removed some of the sensitivity of the device and assigned either translation or rotational movements to each of 3 degrees of freedom, (i.e. x, y and z form translational components, while A, B and C form rotational components).

Additionally, an embodiment of Applicant’s invention combines, “at least one rotation component and at least one translation component .... and the combined component(s) thus obtained is (are) utilized as rotation component(s) in said first operating mode and as translation component(s) in said second operating mode.” Thus, if the user inadvertently makes a translational movement when the device is in the rotational mode, the movement will be read as a rotational device, and *vice versa*. Buxton, on the other hand, describes that its device will read such inadvertent commands as zero: “unintended dimensional data resulting from sloppy manipulation of cap 202 by the user should be discarded.” (See column 7, lines 10-20 generally.)

Lastly, an embodiment of the claimed invention requires that “at least one combination of components is a linear combination.” Applicant describes at page 5, paragraphs [0018-0027] clearly what it means by linearly combining components in step II of Figure 2. For instance, “a linear combination of the parameter corresponding to translation “x” and of the parameter corresponding to rotation “B” is determined” ...such that “B’ = B + x.” In other words, it is a linear combination of at least one of the translational components and at least one of the rotational components. This is simply not the same thing as Buxton’s moving its cap linearly as suggested by the Examiner.

To prove this point and better illustrate the principle of linearly combining components, Applicant submits the following example of an embodiment of the present invention, which illustrates how it is novel and inventive as compared with Buxton.

Begin by assuming that the device is in a rotational mode (or second operating mode), and the user moves the peripheral device as follows:  $x=0.4$ ,  $y=0$ ,  $z=0$ ,  $A=0.6$ ,  $B=0$  and  $C=0$ . According to an embodiment of the present invention, the translation movement  $x=0.4$  would be transformed into a rotational movement and thus added to  $A=0.6$ , and the 3D image would be rotated  $x + A = 1.0$ . On the other hand, Buxton would read the translation movement as 0 (or a "sloppy manipulation"), and thus its 3D image would be rotated only  $A=0.6$ .

Thus it can be seen that Buxton not only does not teach, describe or suggest embodiments of the claimed invention, but rather expressly teaches away from them by nullifying (or zeroing out) any negligible movement, rather than assume such movement was intended to move the 3D image in the selected mode, and thus linearly add it to the intended movement.

For at least these reasons, the new independent claim 30 is novel and inventive with respect to Buxton.

Claims 2, 13-18 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Buxton in view of USPN 7,002,553 to Shkolnikov.

Shkolnikov describes an active keyboard system for a handheld electronic device, which provides users with the ability to enter alphanumeric text and data. Since Shkolnikov was based on a provisional application having a date preceding the filing date of the present invention, but an actual filing date after the filing date of the present invention, Applicant took the liberty of reviewing the content of Shkolnikov's provisional application no. 60/342,382, filed on December 27, 2001 ("the priority document").

Based on this review, Applicant submits that Shkolnikov was improperly cited because the "filter code" that the Examiner relies upon as supplying the missing component as claimed in Claim 2 of the present invention was not disclosed in Shkolnikov's provisional application. In particular, the passage at column 9, lines 17-51,

Appl. No.: 10/722,844  
Amdt. Dated: 6/18/08  
Reply to Office Action Mailed: 2/21/08

of Shkolnikov's '553 patent, referring to the filter code, was not present in the provisional application. Therefore, at least the portion of the Shkolnikov provisional patent application for which it was cited, was not disclosed prior to the filing date of the present application. Thus, Shkolnikov cannot provide any missing teachings to Buxton and is an improper reference under 35 U.S.C. 103(a).

The remaining claims 2, and 7-13 depend, directly or indirectly, from the new independent Claim 30. When the recitations of claims 2, and 7-13 are considered in combination with the recitations of Claim 30, Applicant submits that these dependent claims are also patentable over the cited references.

#### CONCLUSIONS

In view of the above amendments and remarks, Applicant respectfully contend that the application is in condition for allowance. A Notice of Allowance is therefore respectfully requested.

The Examiner may contact the undersigned if there are any remaining issues that can be resolved by telephonic communication.

Respectfully submitted,

\_\_\_\_\_/jet50352/\_\_\_\_\_  
Jonathan E. Thomas  
Attorney for Applicant  
Registration No. 50,352

General Electric Company  
Global Patent Operation  
187 Danbury Rd., Suite 204  
Wilton, CT 06897  
T: (203) 761-1958  
F: (203) 761-1924